蝶と蛾 *Trans. lepid. Soc. Japan* **48** (1): 33-38, March 1997

Description of a new *Melittia* clearwing moth (Lepidoptera, Sesiidae) from Kyushu, Japan

Yutaka ARITA[1)] and Oleg G. GORBUNOV[2)]

[1)] Zoological Laboratory, Faculty of Agriculture, Meijo University,
Tempaku-ku, Nagoya, 468 Japan
[2)] Institute for Problems of Ecology and Evolution, Russian Academy of Sciences,
Leninsky prospekt 33, Moscow V-71, 117071 Russia

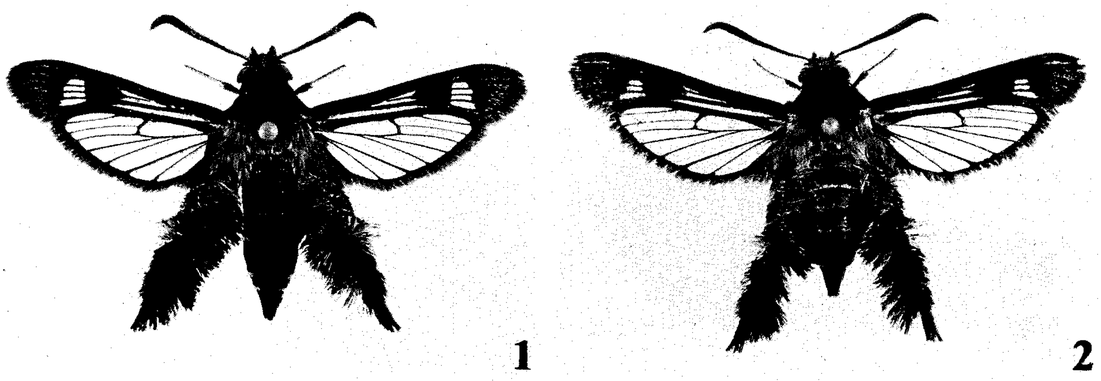
Abstract A new species of clearwing moth, *Melittia nagaii* Arita & Gorbunov sp. nov., is described from Kyushu, Japan, and adults and genitalia of both sexes are figured.

Key words Lepidoptera, Sesiidae, *Melittia nagaii* sp. nov., Japan, taxonomy.

A female specimen of a stout and blackish clearwing moth with bluish iridescence was discovered and collected on 22 July 1993 by Mr Atsushi Nagai. This fascinating clearwing moth is similar to *Melittia formosana* Matsumura, 1911, originally described from Taiwan and recently discovered from Amami-Ohshima Island, the Ryukyus (Arita & Yata, 1988). During survey in 1995 and 1996, the senior author was able to collect a long series of specimens of this species from Kobayashi-shi, Miyazaki-ken, southern Kyushu. The authors carefully compared this species with *M. formosana* from Taiwan and Amami-Ohshima Island, and concluded that it is a new species.

Melittia nagaii sp. nov. (Figs 1-6)

Description. Male (Fig. 1). Alar expanse 30.0-36.0 mm. Head: antenna dark brown-black, sparsely dotted with white on frontal side, and densely dotted with white at 1/3, apical part brown; ventral side brown; frons grey with leaden metallic sheen, with a narrow white stripe laterally; vertex dark grey with white hair-like scales; occipital fringe grey mixed with yellow in dorsal half, white in ventral half. Thorax: pro-, meso-, metathorax, patagium and tegula olive green with greenish sheen; metathorax with lateral tufts grey densely mixed with white. Legs: forecoxa black, fringed with snow white; midtibia black with bluish sheen, with bluish white bands at 1/4, 1/2 and 3/4; midtarsus with a snow white band at base;



Figs 1-2. *Melittia nagaii* sp. nov., adults. 1. Male, holotype. 2. Female, paratype.

hindtibial tuft black with bluish sheen, mixed with white dorsally, with two large white spots at middle and between both spurs ventrally ; spurs black ; hindtarsal tuft black with metallic sheen, with a small white spot medio-externally. Abdomen : dorsally black with steel-blue on posterior margin of segments 2, 4, 6 and 7 ; ventrally basal two segments black with a few white scales, others whitish ; anal tufts black mixed with a few white scales. Forewing :

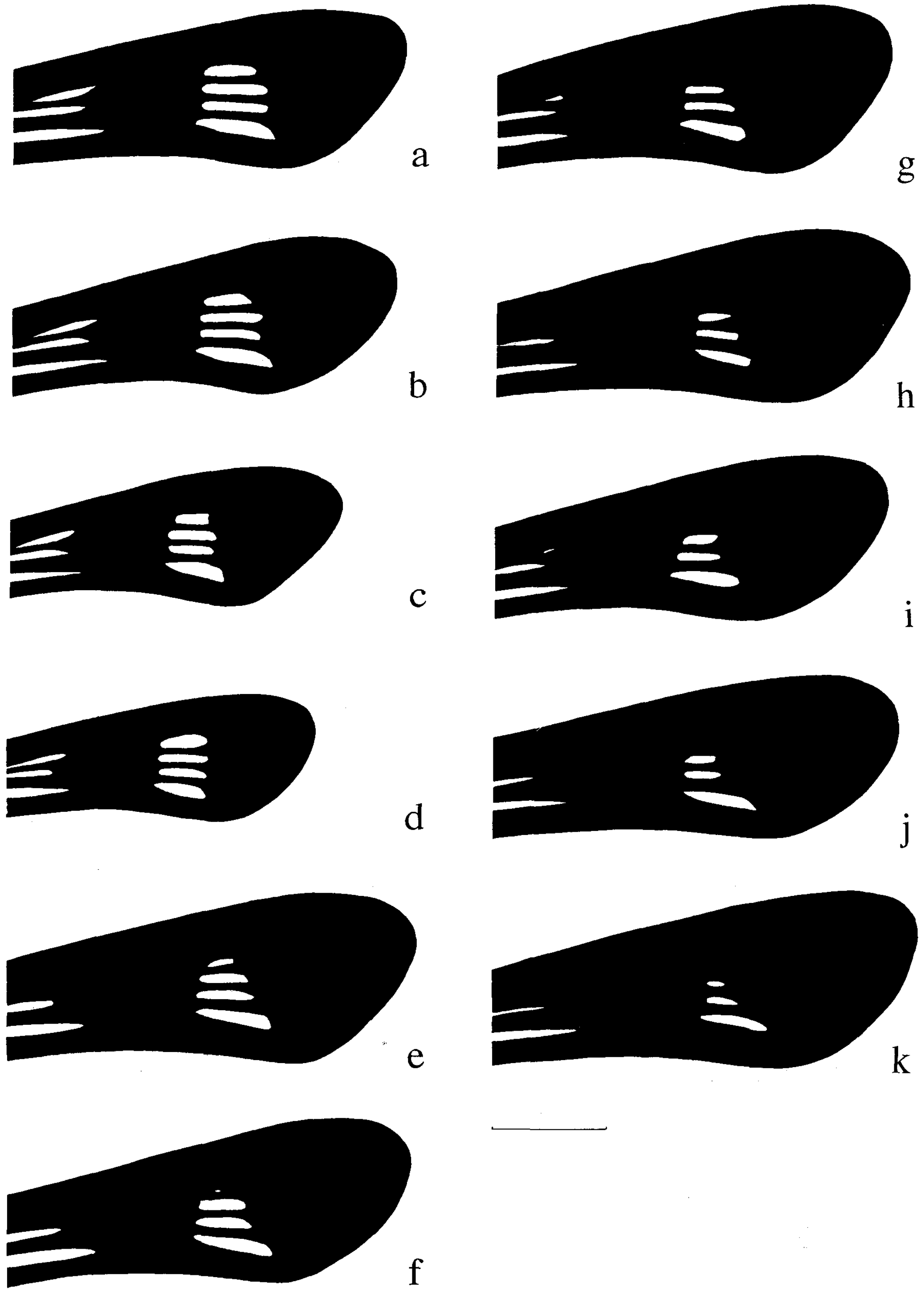


Fig. 3. *Melittia nagaii* sp. nov., variations of the discal spot and external transparent area of the forewing (without cilia) (a–d : male, e–k : female). Scale line = 3.0 mm.

costal and apical area, discal spot and veins brownish black with bronze purple sheen; basally at anal margin with white scales; white powdering on very broad apical area and a few on costal and dorsal margin; discal spot very broad with a long cuneiform projection proximally; anterior transparent area divided into two short hyaline streaks, external one shorter; posterior transparent area well developed and extended from near base of wing to discal spot; external transparent area divided into four rather short cells, these four hyaline streaks almost same length; cilia dark grey. Hindwing: hyaline; veins black; outer margin narrowly black; anal area black, but densely covered with silvery blue; cilia dark grey.

Male genitalia (Fig. 4). Tegumen-uncus complex rather narrow; uncus bilobed distally, with a small plate of strong and pointed setae internally on each side; gnathos large, broad, with a large and bilobed sclerotized plate medially; valva rather broad, long, elongate-oval, expanded apically; setae of distal field well separated from medial one; setae of medial field relatively short, reaching pocket-shaped crista; ventral lobe rather broad with short setae; saccus remarkably broad and large, rounded basally; aedeagus very long, narrow, gently curved, almost as long as valva; vesica with numerous cornuti.

Female (Fig. 2). Alar expanse 35.0–38.0 mm. Similar to male except for the shape of forewing anterior and external transparent areas. Anterior transparent area one short hyaline streak usually, very rarely with an additional vestigial small spot. External transparent area divided into three cells, very rarely into four cells.

Female genitalia (Figs 5–6). Papilla analis rather small, with short setae; both apophyses

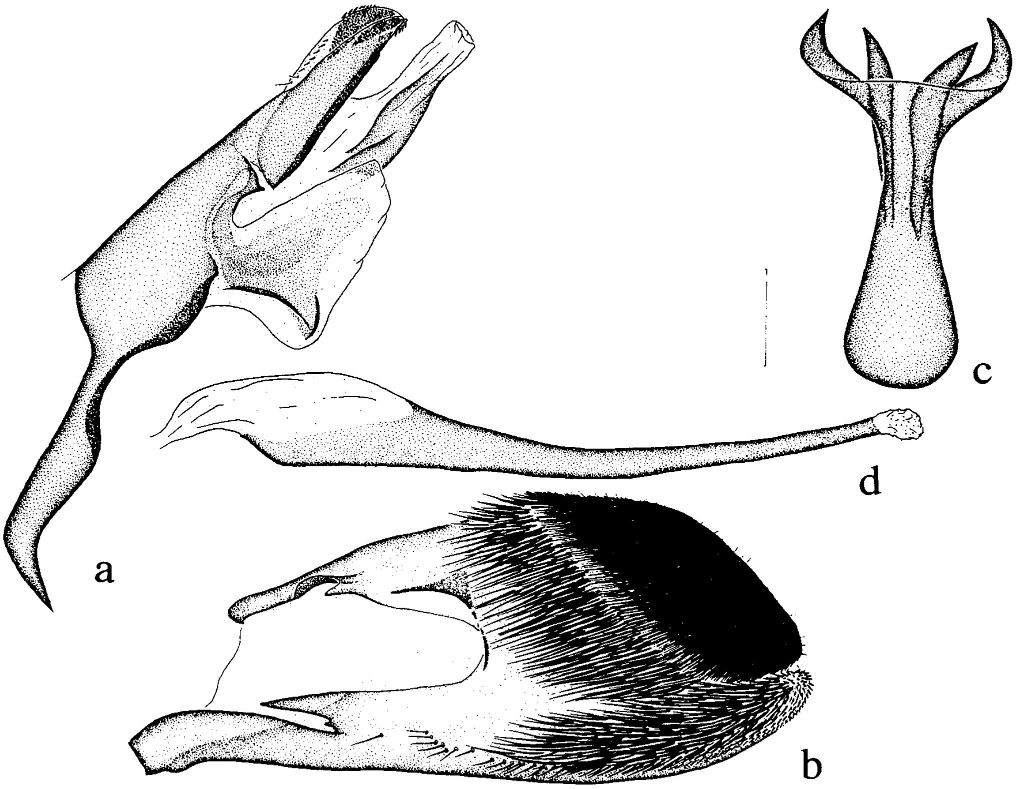
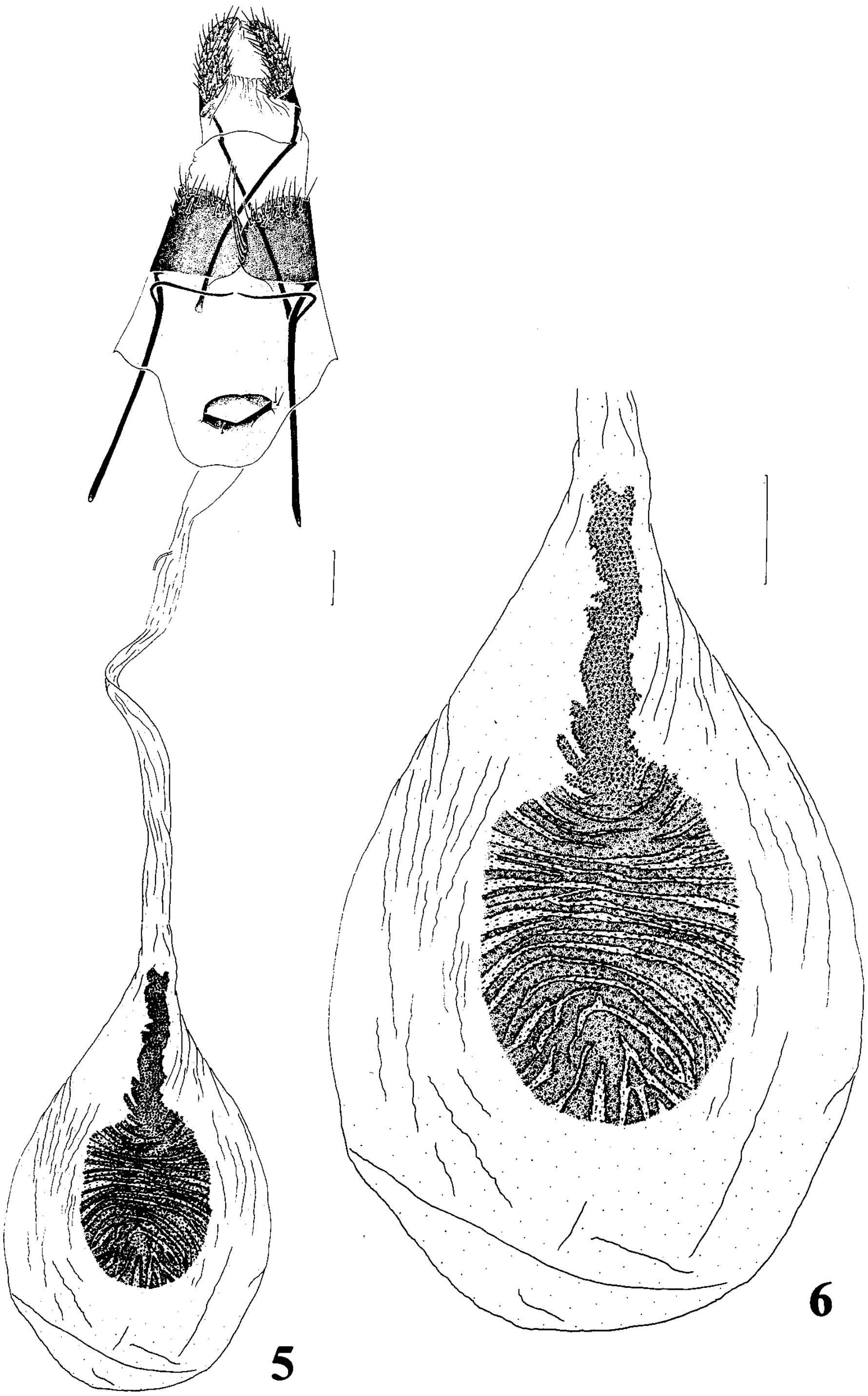


Fig. 4. *Melittia nagaii* sp. nov., male genitalia (genitalia preparation No. GA-150 (1697 YA)) (a: tegumen-uncus complex, b: valva, c: saccus, d: aedeagus). Scale line=0.5 mm.



Figs 5–6. *Melittia nagaii* sp. nov., female genitalia (genitalia preparation No. GA-168 (1654 YA)). 5. Ventral view. 6. Detail of corpus bursae. Scale line=0.5 mm.

ralatively long, of same length ; 8th tergite broad with short setae at distal margin and with a few setae at inner margin ventrally ; ostium bursae ringed and much less sclerotized ; antrum membranous ; ductus bursae quite long, narrow ; corpus bursae pear-shaped, rather large, with signum very large and long, flask-shaped, anterior half elliptical with numerous transverse, dentate narrow stripes, posterior half long and slender.

Variability. The number of the narrow hyaline streaks of anterior transparent area of the forewing is two in male but is only one in female. The size of the external transparent area of the forewing is extremely variable, especially in females. This area is divided into 4 cells in male (Figs 3a–d), but in female (Figs 3e–k) it is divided into 3 cells usually, and upper two cells sometimes become very small, and rarely into 4 cells with upper one extremely small in size.

Diagnosis. Superficially most similar to *M. formosana* Matsumura, 1911, but differs from the latter in the male forewing with the external transparent stripes short instead of very long in *formosana* of the Amami-Ohshima population, while these stripes are similarly short in the Taiwan population. In the female, the external transparent stripes are smaller and usually three unlike four in the Amami-Ohshima population; the female of the Taiwan population is lacking in our collection. In the male genitalia the valva of *nagaii* sp. nov. is distinctly broader than that of *formosana*; in the female genitalia the signum of *nagaii* sp. nov. has posterior half comparatively shorter and anterior half broader than in *formosana*.

Bionomics. The hostplant is unknown, but all adult specimens were captured flying near a kind of snake gourd, *Trichosanthes rostrata* Kitamura (Cucurbitaceae). These male and female adults frequently visit reddish orange cymose flowers of *Cayratia japonica* (Vitaceae) and rarely snow white cymose flowers of *Sambucus chinensis* (Caprifoliaceae).

Habitat. Woodland margins.

Distribution. Japan: Kyushu (Miyazaki-ken).

Holotype ♂, Japan, Kyushu, Miyazaki-ken, Kobayashi-shi, Idenoyama, 15. VII. 1995, on flower of *Cayratia japonica* (Vitaceae), Y. Arita legit. Paratypes: allotype ♀, with same data as holotype except 8. VIII. 1995; 1 ♀, with same data as holotype except 22. VII. 1993, A. Nagai legit; 2 ♂, with same data as holotype except 16 & 18. VII. 1995, on flower of *Sambucus chinensis* (Caprifoliaceae); 6 ♂, with same data as holotype except 15–18. VII. 1995, genitalia on slide no. 1697 YA (=GA-150); 33 ♂ 17 ♀, with same data as holotype except 18–19. VII. & 5–8. VIII. 1995, genitalia on slide nos, ♂ 1698 YA & ♀ 1654 YA (=GA-168); 87 ♂ 8 ♀, with same data as holotype except 20–22. VII. 1996, Y. Arita & M. Ikeda legit. All type series will be deposited in the Zoological Laboratory, Faculty of Agriculture, Meijo University.

The specific name *nagaii* is dedicated to Mr Atsushi Nagai, Kobayashi-shi, Miyazaki-ken, who is the first discoverer of this blackish, stout clearwing moth.

Acknowledgements

The senior author expresses his hearty thanks to Mr Atsushi Nagai, Kobayashi-shi, Miyazaki-ken, for his help during field surveys. The authors also thank Dr T. Eichlin, California, for his linguistic help.

Reference

Arita, Y. & N. Yata, 1988. Discovery of *Melittia formosana* Matsumura (Lepidoptera, Sesiidae) in Amami-Ohshima Island, the Ryukyus. *Tyô Ga* **39**: 253–258.

摘　　要

九州より見いだされたモモブトスカシバ属の新種 (鱗翅目，スカシバガ科) (有田　豊・Oleg G. Gorbunov)

台湾から記載され最近奄美大島から発見されたタイワンオオモモブトスカシバ *Melittia formosana* Matsumura, 1911 に酷似するスカシバガの 1 ♀が永井庬氏によって，1993 年 7 月 22 日に宮崎県小林市出の山公園で採集された．その標本の送付を受けた有田は 1995 年と 1996 年に同所で調査をしたところ，多くの個体を追加採集することが出来た．これらを台湾産と奄美大島産の個体群と比較したところ新種と認められたので *Melittia nagaii* Arita & Gorbunov sp. nov. として記載した．この新種は，雄では，タイワンオオモモブトスカシバの奄美大島産の個体群とは，中室外方透明紋が短く明らかに区別がつくが，台湾産の個体群とは非常に良く似ている．雌では，この中室外方透明紋は奄美大島の個体群では 4 紋で長いのに対してこの新種では 3 紋で短い．台湾産の雌は比較標本がない．本新種の雄交尾器はバルバは幅広く，雌交尾器ではシグナムの上半分が短く，下半分はより幅広いことで区別される．

和名は，永井庬氏の提案もありルリオオモモブトスカシバとしたい．

(Accepted September 20, 1996)

Published by the Lepidopterological Society of Japan,
c/o Ogata Building, 2-17, Imabashi 3-chome, Chuo-ku, Osaka, 541 Japan